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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,333	09/10/2004	Konstandinos Zamfes	PAT 3782-2 US	5332
<div>7590 08/17/2007 DIEDERIKS &amp; WHITELAW, PLC 12471 Dillingham Square, #301 Woodbridge, VA 22192</div>			<div>EXAMINER LEE, SHUN K</div>	
			<div>ART UNIT 2884</div>	<div>PAPER NUMBER</div>
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/711,333

Applicant(s)

ZAMFES, KONSTANDINOS

Examiner

Shun Lee

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2004 and 23 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 23 May 2007. These drawings are acceptable.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities: "comprising two sensors" on line 1 in claim 4 should probably be --the at least one sensor comprises two sensors--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the relative deflections" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Zamfes (US 6,386,026).

In regard to claim 1, Zamfes discloses an apparatus for measuring signals in discrete media of drilling cuttings comprising:

- (a) at least one sensor (e.g., UV and fluorescence instruments, or gamma and nuclear density instruments; column 4, line 62 to column 5, line 13) placed proximate an analytical tube (35); and
- (b) an auger (38) within the analytical tube (35) for conveying the drilling cuttings through the analytical tube (35), past the at least one sensor.

In regard to claim 2 which is dependent on claim 1, Zamfes also discloses that the at least one sensor comprises a natural gamma radiation sensor (*i.e.*, gamma and nuclear density instruments; column 4, line 62 to column 5, line 13).

In regard to claim 3 which is dependent on claim 1, Zamfes also discloses that the at least one sensor comprises a sensor for measuring the absorption properties of gamma radiation in discrete media of drilling cuttings (*i.e.*, gamma and nuclear density instruments; column 4, line 62 to column 5, line 13).

In regard to claim 10 which is dependent on claim 1, Zamfes also discloses that the at least one sensor comprises a fluorescent brightness measurement sensor which measures the amplitude and frequency of light emission produced (*i.e.*, UV and fluorescence instruments; column 4, line 62 to column 5, line 13).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zamfes (US 6,386,026) in view of Georgi *et al.* (US 5,571,962).

In regard to claim 4 which is dependent on claim 3, Zamfes also discloses that the at least one sensor comprises two sensors wherein the first is a gamma ray sensor (*i.e.*, gamma and nuclear density instruments; column 4, line 62 to column 5, line 13). The apparatus of Zamfes lacks that the second sensor is a beta ray receiver attached together with the first sensor on one side of the analytical tube. Georgi *et al.* teach (column 5, line 48 to column 6, line 25) to provide a beta ray receiver, in order to reduce measurement errors. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to attach a beta ray receiver together with the gamma ray sensor in the apparatus of Zamfes, in order to reduce measurement errors.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zamfes (US 6,386,026) in view of Davis *et al.* (US 4,536,713).

In regard to claim 5 which is dependent on claim 1, the apparatus of Zamfes lacks that the at least one sensor comprises a sensor for measuring the Induction Resistivity properties of formation in discrete media of drilling cuttings. Davis *et al.* teach (abstract; Fig. 2) an apparatus for measuring the induction resistivity in discrete media of drilling cuttings, in order to determine formation characteristics (column 1, lines 28-52). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide an Induction Resistivity sensor as one of the sensors

in the apparatus of Zamfes, in order to determine formation characteristics by measuring the discrete media of drilling cuttings.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zamfes (US 6,386,026) in view of Sharma *et al.* (US 6,220,371).

In regard to claim 6 which is dependent on claim 1, the apparatus of Zamfes lacks an explicit description that the at least one sensor comprises a sensor for measuring the Sonic velocities and penetration properties of formation in discrete media of drilling cuttings. Sharma *et al.* teach (column 3, line 43 to column 4, line 63) to provide acoustic sensors, in order to determine formation characteristics. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide acoustic sensors as one of the sensors in the apparatus of Zamfes, in order to determine formation characteristics by measuring acoustic properties the discrete media of drilling cuttings.

In regard to claim 7 in so far as understood, the method of Zamfes lacks an explicit description of correlating the relative deflections depending on quantity of sample passing through an auger. Sharma *et al.* teach (column 3, line 43 to column 4, line 63; column 9, line 33-56) to determine chemical and physical properties such as composition. It should be noted that measurements depend on sample quantity (e.g., an attenuation measurement depends on both the absorption coefficient and sample quantity). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to correct for the quantity of sample passing through the auger in the method of Zamfes, in order to determine chemical and physical properties.

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11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zamfes (US 6,386,026) in view of Eckels (US 3,802,259).

In regard to claim 8 which is dependent on claim 1, the apparatus of Zamfes lacks that the at least one sensor comprises a Fluorescence brightness measurement by injection of dissolvent (55). Eckels teaches (column 3, lines 7-21; column 6, lines 5-24) a process of constantly injecting small dose of dissolvent in to the cuttings flow, in order to determine changes related to formation hydroscopic absorption. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide acoustic sensors as one of the sensors in the apparatus of Zamfes, in order to determine changes related to formation hydroscopic absorption.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zamfes (US 6,386,026) in view of Sharma *et al.* (US 6,220,371) as applied to claim 7 above, and further in view of Eckels (US 3,802,259).

In regard to claim 9 which is dependent on claim 7, Eckels is applied as in claim 8 above.

### ***Response to Arguments***

13. Applicant's arguments with respect to amended claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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